

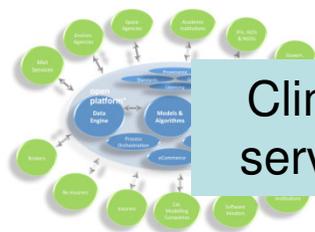
Innovation in Earth Observation Services

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Head of Strategic Business Development, ISIC

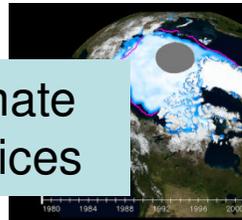


NCEO-CEOI Annual Science Conference
September 2011

Innovation challenge...



Climate services



Remote sensing for operational pollution monitoring, source detection and identification

The 'West Cork' Case

- Russian convoy consisted of the aircraft carrier Admiral Kuznetsov - 14/02/2009.
- The spill is estimated up to 400 - 500 ton of oil spilled.

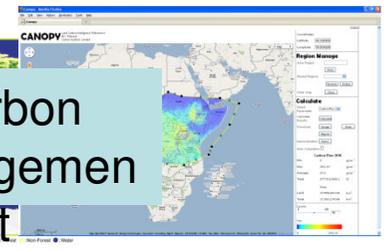
Maritime security



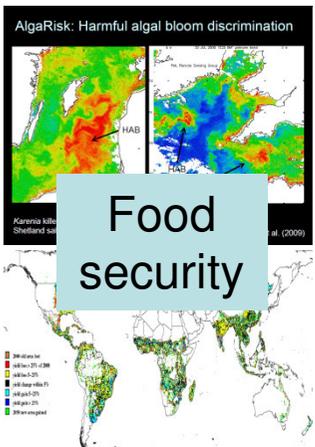
JAXA

PALSAR 10m Global Forest/Non-Forest Map 2009

Carbon management



How do we maximise the value of current and future EO technology in commercial, policy and socially relevant applications?



Food security



Renewable energy resources



Air quality forecasts



Location based services



Risk management

Some market figures ...

The next decade will see a forecast of 230 Earth observation satellites launched compared to only 107 in the previous ten years.¹

2009/10 global Carbon Market Intelligence market is valued at £30bn.²

Forty one countries are expected to have an Earth observation satellite by 2019 versus only 26 today.¹

Commercial satellite data sales top \$1billion in 2009. To reach \$4bn pa by 2020.¹

Earth Observations may generate approximately \$170billion of global economic activity.³

Defense & security uses will remain the principal growth driver for commercial data sales worldwide, as revenues are expected to climb to \$4bn by 2019, a CAGR of 15%¹

1. Euroconsult, Satellite based Earth observation, Market prospects to 2018
2. Kmatrix, Feb 2011
3. CSIS Space Initiatives, July 2008

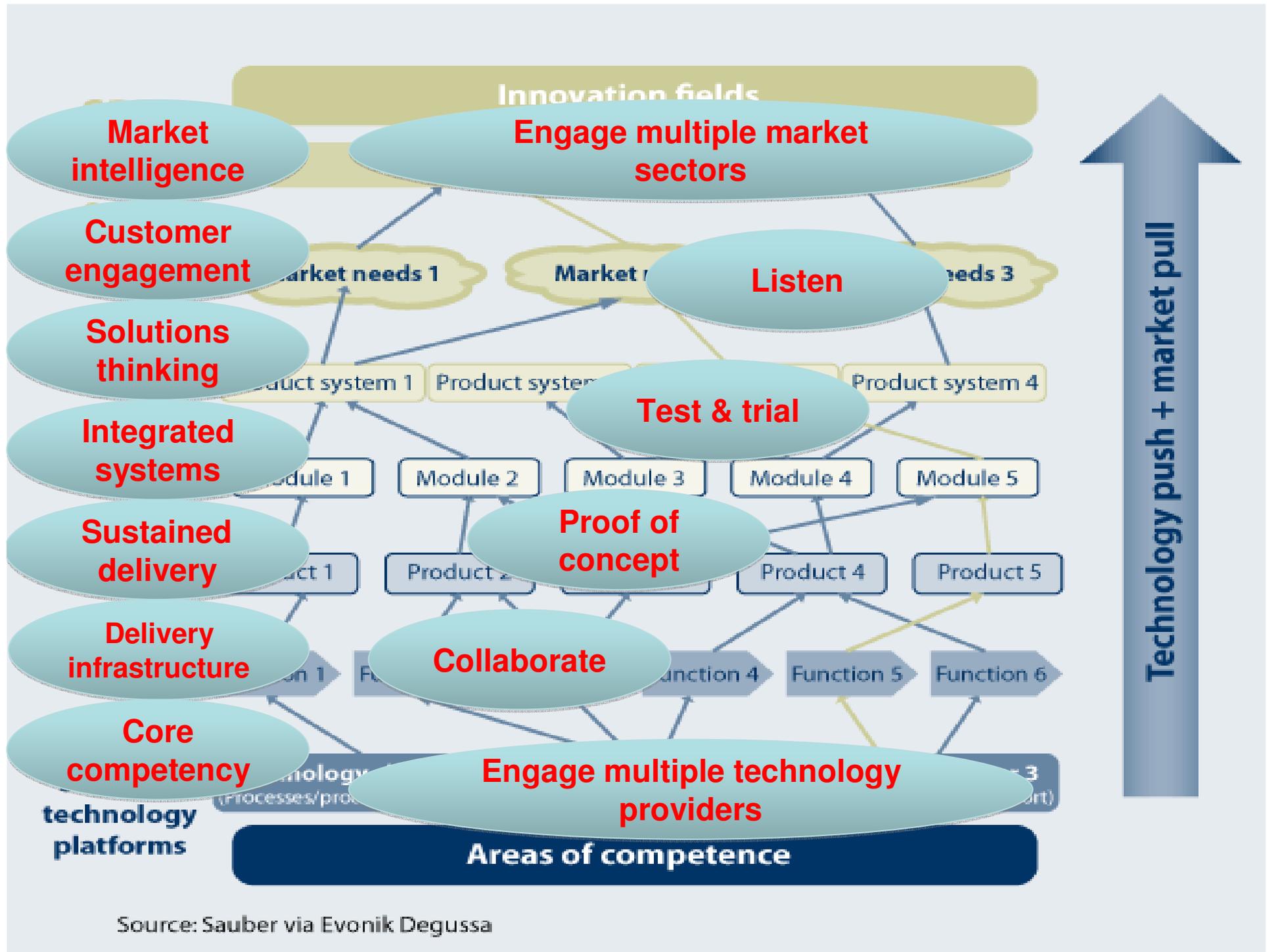
Risk – a snapshot

“It is an indisputable fact that weather-related catastrophes are costing the insurance industry more than ever before...In order for insurers to understand the changing level of risk, good climate data from a variety of sources is absolutely vital and should be freely available.”

Lord Levene

Chairman, Lloyd’s of London

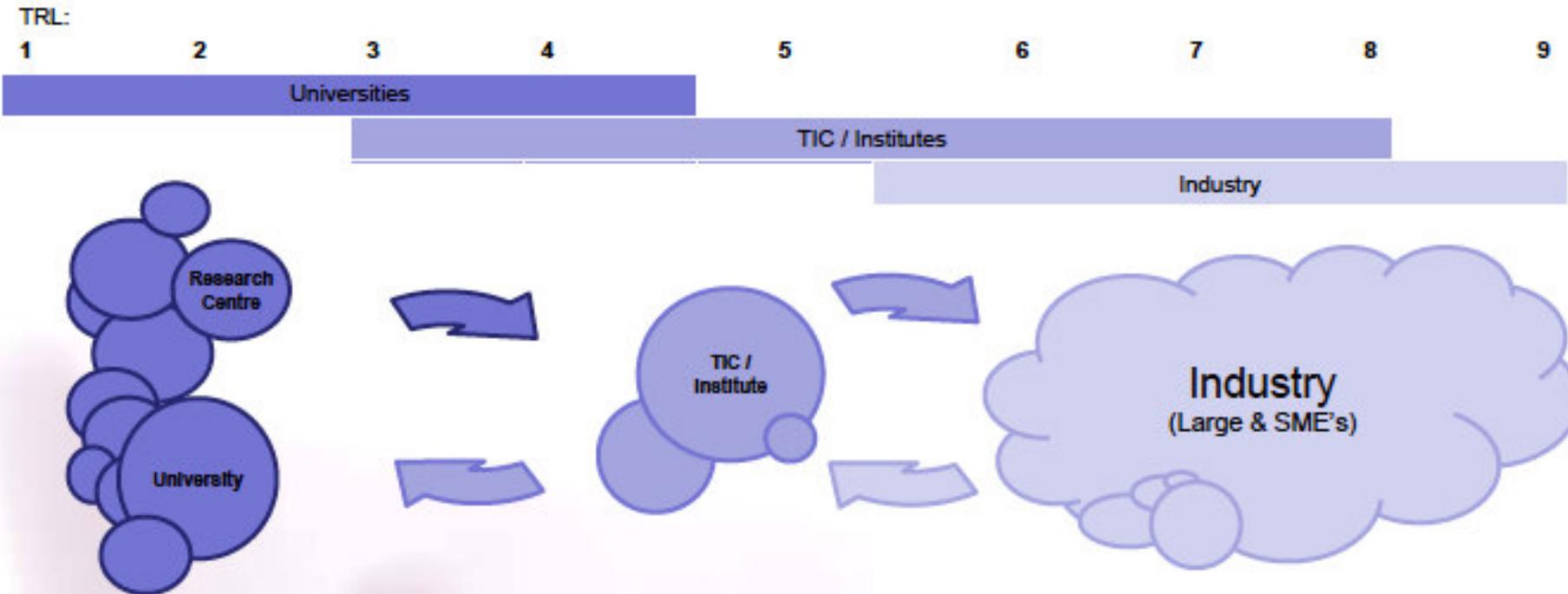
Carl Hedde, Munich Re, Natural Disasters, 2011 (to May 2011)	2011 up to May	2010 up to June	Average of the last 10 years 2001-2010 (Jan –June)	Average of the last 31 years 1980-2010 (Jan –June)
Number of events	255	475	358	305
Overall losses (US\$m)	253,000	97,000	50,000	47,500
Insured losses (US \$m)	48,300	26,700	12,900	9,700
Fatalities	18,000	230,000	52,900	46,400



Source: Sauber via Evonik Degussa

ISIC role

UK Landscape & Context

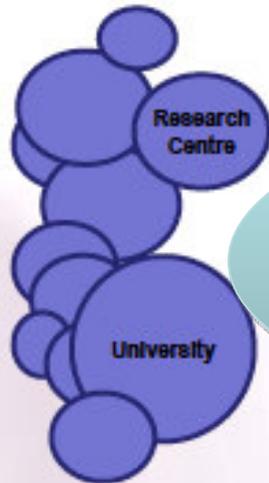
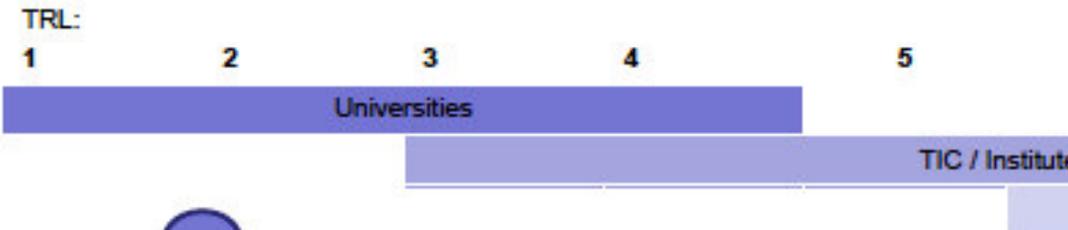


Map the landscape from Research through to Challenge Areas for each key technology & application areas:

Research excellence	Research Centres	Technology & Innovation Centres	RTOs, PSREs, Science parks, etc	Industrial R&D Centres	Industry Commitment	UK Priorities
RCUK to identify	RCUK , charity & other centres and institutes (IMRC's	RD/DA centres, etc. - Existing - Proposed	Other organisations in the area.	Major R&D centres & incubators	-Opportunities for UK - Willingness to co-invest	- Low Carbon - Digital Economy - Energy

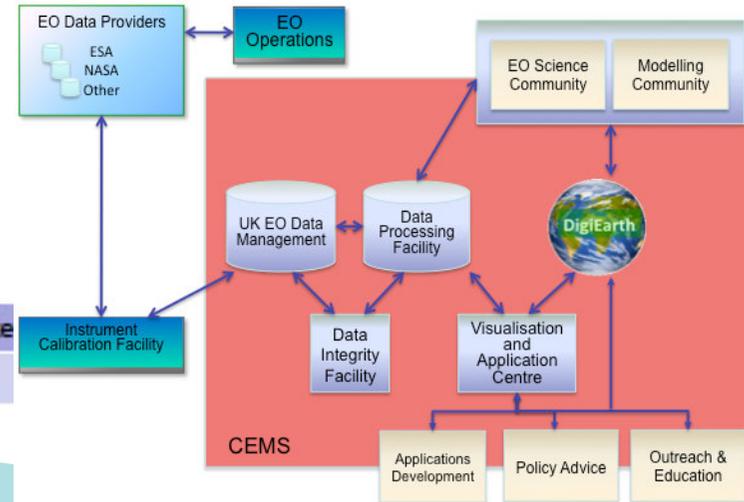
ISIC role

UK Landscape & Context



Facility for Climate and Environmental Monitoring from Space

Infrastructure support

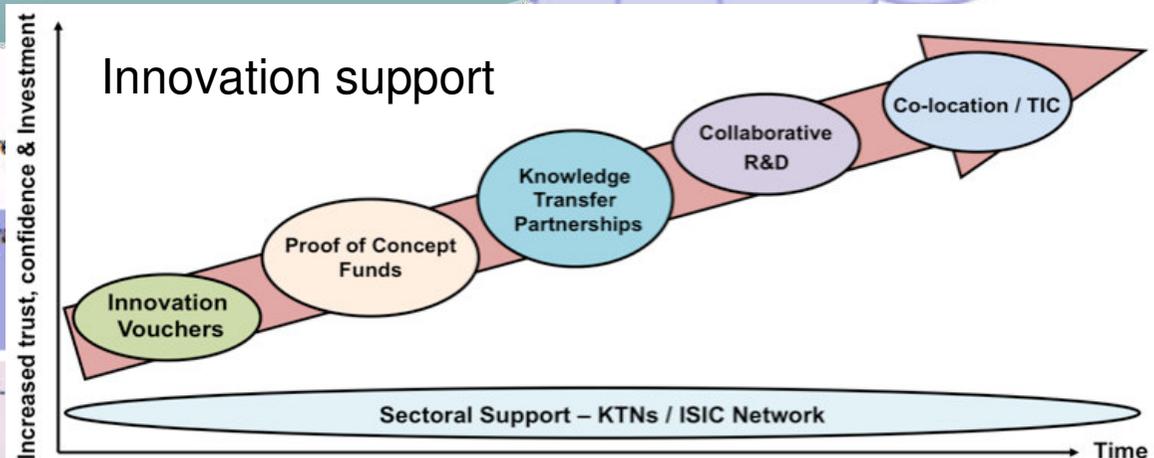


Industry (Large & SME's)

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Innovation support



Introducing our speakers

- Chetan Pradhan, BARSC - Commercial perspective
- Robin Higgons, Qi3 – EO Markets
- Gordon Campbell, ESA – Innovation and Markets for EO Services
- Prof Michael Mainelli, Z/Yen – View from the City
- Ed Parson, Google – Is the future of EO in the mass market?
- Juan Carlos Castilla Rubio, PSI – Public private innovation for managing resource scarcity under increasing complexity and scarcity
- Discussion moderator – Dr Gordon Campbell, ESA